Financials Archiving –
News within SAP S/4HANA ®
Finance
Susanne Tewes, SAP
11. Februar 2020
Agenda

What is new?
Process flow of financial archiving
Subledger – dependencies
FI-AP/AR documents archiving
FI-GL documents archiving
FI-AP/AR totals archiving
FI-GL totals archiving
Compression run
Archiving of Master Data
How to access archived financial data?
What is **new**?
Data Archiving, Data Aging & ILM in SAP S/4HANA

Way forward >>
FI_DOCUMNT: What’s new? (1) – overview

Past
- Archiving object FI_DOCUMNT was no longer available by transition into SAP S/4HANA world (starting with SAP Simple Finance add-on 1.0)
- In spite of this, data aging for financial was introduced (data aging object: FI_DOCUMENT).

What’s new
- Archiving object FI_DOCUMNT is re-implemented
  – via support package / SAP note as of:
    ▫ SAP S/4HANA Finance 1503 (by SAP notes 2498230 & 2508708, support package 08)
    ▫ SAP S/4HANA Finance 1605 (by support package 04)
  – in standard as of:
    ▫ SAP S/4HANA Finance, on-premise edition 1610 and following
    ▫ SAP S/4HANA Finance cloud edition 1611 and following
- Archiving object FI_TF_GLC is replaced with FI_TF_GLF
FI_DOCUMNT: What’s new? (2) – overview

What’s new

- Archiving of different sub-ledgers (e.g. Asset Management, Controlling) is required for FI archiving
- Archiving of Material Ledger documents is no longer a pre-requisite for FI archiving (SAP note 2659820)
- Archiving objects CO_ITEM and CO_TOTAL will be replaced with CO_TRANS
- Archiving with CO_TRANS can only be performed for complete fiscal years
Process flow of financial archiving
Excursus: Universal Journal: single source of truth

General Ledger
- Ledger
- Company
- Account
- Profit Center
- Amount 1
- Amount 2
- Amount 3
- ...

Profitability
- Operating Concern
- Market Segment
- ...

Universal Journal (table ACDOCA)
- Ledger
- Company
- Account / Cost Element
- Profit Center
- Amount 1
- Amount 2
- Amount 3
- Coding Block
- Fixed Asset
- Market Segment
- Material
- Customer Fields
- ...

Management Accounting
- Controlling Area
- Cost Element
- Amount 1
- Amount 2
- Coding Block
- ...

Asset Accounting
- Company
- Fixed Asset
- ...

Material Ledger
- Company
- Material
- ...

© 2020 SAP SE or an SAP affiliate company. All rights reserved. ǀ PUBLIC
The already existing dependencies like:
- Document type life
- Account type life
- Minimum number of days in the system
- Documents with withholding tax information rest at least 455 days in the system
- Recurring documents, parked documents or sample documents are not considered
- No open items within the document

remain still the same and are still valid. But they won’t be discussed in this document.

Material Ledger archiving is no longer a pre-requisite for FI archiving with implementation of SAP note 2659820.

FI Totals:
No pre-requisite for compression run! Compression run can also be executed without FI totals archiving. But in case you need to fulfill Data Privacy & Protection requirements, you need to perform FI totals archiving.
Subledger – dependencies
The already **existing dependencies** like:
- Document type life
- Account type life
- Minimum number of days in the system
- Documents with withholding tax information rest at least 455 days in the system
- Recurring documents, parked documents or sample documents are not considered
- No open items within the document

remain still the same and are still valid. But they won’t be discussed in this document.

**Material Ledger** archiving is no longer a pre-requisite for FI archiving with implementation of SAP note 2659820.

**FI Totals:**
No pre-requisite for compression run! Compression run can also be executed without FI totals archiving. But in case you need to fulfill Data Privacy & Protection requirements, you need to perform FI totals archiving.
Subledger – dependencies CO
Dependencies in more detail – subledger CO

Archiving objects

- CO_TRANS
- CO_ALLO_ST
- CO_ORDER
- COPA2*

Archiving class

- K_COSTS

→ Successful CO archiving will initialize following content in ACDOCA:
  - Entries with filled CO_BELNR: fields CO_BUZEI and OBJNR will be initialized
  - Entries with BSTAT = “C” AND MIG_SOURCE = “C”: field OBJNR will be initialized

Corresponding entries in ACDOCA still remain, but are no longer CO relevant

Further information:
CO_ITEM and CO_TOTAL will be replaced by CO_TRANS

How to identify CO documents in ACDOCA?:
- ACDOCA-CO_BELNR = filled → CO document, CO archiving will initialize ACDOCA-CO_BUZEI
- ACDOCA-BSTAT = C and ACDOCA-MIG_SOURCE = C → CO document from migration, CO archiving will initialize ACDOCA-OBJNR

How to archive account based COPA entries in table ACDOCA?
Use transaction KE0H for object COPA2_XXXX. ACDOCA field XPAOBJNR_CO_REL is set to ‘A’, fields OBJNR and CO_BUZEI will be initialized.
subledger CO – CO_TRANS additional information

- Availability of CO_TRANS:
  - SAP S/4HANA Finance 1503 up to SP07 (SAP_FIN 720): see SAP notes 2230377, 2512758
  - The functionality is available without correction instructions as of:
    ▫ SAP S/4HANA Finance 1503 SP08
    ▫ SAP S/4HANA OP 1511 SP06
    ▫ SAP S/4HANA Finance 1605 SP04
    ▫ SAP S/4HANA OP 1610 SP00 and later releases
- Usage of reconciliation objects within CO_TRANS: see SAP note 2426075
- Usage of additional ledgers in FI (not only leading ledger): please implement SAP note 2535263
- Selection criteria of CO_TRANS:
  - not possible for single periods (like CO_ITEM)
  - as CO_TRANS is also archiving the totals (on a yearly basis as it always includes periods 1-12 and up to 4 special periods), complete year needs to be included in archiving
- CO_TRANS & CO_ALLO_ST: no dependency between them

Further information:
CO_ITEM and CO_TOTAL are replaced by CO_TRANS

Relevant SAP notes for CO archiving:
- 2230377: Implementation of CO_TRANS
- 2426075: CO_TRANS will support reconciliation object
- 2512758: downport of CO_TRANS
- 2535263: CO_TRANS did not clear CO relevant fields in ACDOCA for additional ledgers in FI, therefore FI_DOCUMNT could not be performed successfully for them
- 2780157: CO_TRANS dump in case of many records / activity types for the cost centers in table ONRKL
subledger CO – CO_TRANS reporting for CO totals with archive access

Archive files can be read by

- report FINS_CO_TRANS_READ is used by transactions SARA and SARI
- transactions KSB1 and KSB5 (via option ‘data source’)
- report writer (e.g. report group 1SIP) via option ‘data source’ / ‘archive information system’ or ‘archive files’ (please see further information in SAP note 2576438 with required instructions)
**subledger CO – preparation of migrated CO documents for FI compression**

Migrated CO documents need to be prepared by following transactions (CO archiving preparation for compression) for final ACDOCA compression (in addition to archiving with CO_TRANS and others)

**Transactions**
- **FINS_AR1_ANALYZE:** this report gives you the number of CO entries that can be marked for deletion / as ‘no longer CO relevant’ in ACDOCA.
- **FINS_AR1:** will update ACDOCA for the above selected documents
- **FINS_AR1_MONITOR:** transaction to monitor the procedure

**Execution**
Each time you have archived CO data with relevance to ACDOCA (e.g. after CO_TRANS archiving).

---

**When should CO archiving preparation for compression (FINS_AR1) be executed?:**
FINS_AR1 is preparing special CO relevant ACDOCA line items (e.g. with no BKPF entry) for FI compression run. These ACDOCA entries are coming from migrated CO documents. It should be executed each time, you have enough relevant CO data available, examples:
- After original migration to S/4
- After successful CO archiving with CO_TRANS
- After successful archiving of CO data with other archiving objects (e.g. with SD_VBAK, PS_PROJECT)
Subledger – dependencies AA
Dependencies in more detail – subledger AA

Archiving object
- AM_ASSET
- AM_STEUER

→ Successful AA archiving won’t set any special marker within ACDOCA
→ FI_DOCUMNT will check existence of asset master record (table ANLA)

How to identify AA documents in ACDOCA?:

- ACDOCA-ANLN1 is filled → AA document
- ACDOCA-MIG_SOURCE = A → AA document from migration

Please implement SAP note ‘2608278: Checking for assets in ACDOCA’ so that asset existence will be checked for special scenarios based on ACDOCA and BSEG
Dependencies in more detail – Why is AA archiving required?

Consistency reason
- By only archiving table ACDOCA without archiving in Asset Management itself, the statistical line item of asset accounting would remain (table FAAT_DOC_IT) and also asset master data.
- To ensure data consistency, only complete business scenarios can be archived.

Reporting reason
- By only archiving table ACDOCA without archiving in Asset Management itself, no valid asset reporting would be possible any longer.

The legal reporting of AA (e.g. report RABEST, RAGITT) has an archive file access. Therefore legal reporting for AA can be done even the documents in AA have been archived. There is technically no need to keep the AA data online in the system.
Subledger – dependencies ML
Dependencies in more detail – subledger ML, no longer required

Archiving objects
- CO_ML_BEL
- CO_ML_IDX
- CO_ML_DAT

Implementation of SAP note 2659820
- before:
  - successful ML archiving initialized ACDOCA-KALNR
- after:
  - CO_ML_BEL will no longer clear ACDOCA-KALNR &
  - FI_DOCUMNT archiving will no longer check for ACDOCA-KALNR = blank

ML archiving is no longer a hardcoded prerequisite for FI_DOCUMNT archiving, but became optional

How to identify ML documents in ACDOCA?:
- No special fields available like in AA, only: ACDOCA-MIG_SOURCE = M → ML document from migration
- In general, a linkage between ACDOCA and Material Ledger documents is possible via the following fields:
  - AWTYP
  - AWREF
  - AWORG
  - AWSYS

Usage of note 2659820: ML and FI archiving logic is no longer dependent from each other. Performing ML archiving will archive the relevant ML tables, but ACDOCA entries will remain until FI archiving and compression will handle them.
Symptom
- decrease in system performance in Inventory Valuation area during posting period

Reason
- usage of new data model in SAP S/4HANA (Material Ledger is using table ADOCA), select on this could be slow

Solution
- implementation of table ADOCA_M_EXTRACT (actual inventory quantity and value data is calculated based on this table and no longer based on ADOCA)
- during material inventory document posting, records (inventory valuation relevant) will also be inserted into ADOCA_M_EXTRACT
- ADOCA_M_EXTRACT is periodically condensed → periodically reduced
- access on ADOCA_M_EXTRACT is faster

Further information: SAP note 2342347
FI-AP/AR
documents archiving
Vendor / Customer documents
The already **existing dependencies** like:
- Document type life
- Account type life
- Minimum number of days in the system
- Documents with withholding tax information rest at least 455 days in the system
- Recurring documents, parked documents or sample documents are not considered
- No open items within the document

remain still the same and are still valid. But they won’t be discussed in this document.

**Material Ledger** archiving is no longer a pre-requisite for FI archiving with implementation of SAP note 2659820.

**FI Totals:**
No pre-requisite for compression run! Compression run can also be executed without FI totals archiving. But in case you need to fulfill Data Privacy & Protection requirements, you need to perform FI totals archiving.
FI_AP/AR documents archiving – graphical overview

FI_DOCUMNT_WRI:
- Creates archive files for all FI document relevant tables, e.g.:
  - BKPF
  - BSEG
  - ACDOCA
  - FAGLFLEXA
- By saving all these tables in archive files, already existing reports using archived data can still be used / no coding changes for them are needed. (see SAP note 2346296 section 'storage format)

Further information for tables x_BCK and KNCX_DIF / LFCX_DIF can be found within SAP note 2346296.

x_BCK:
- Entries will be written if account type life of the secondary indexes is maintained as longer than that of the documents.
- In addition like previously (SAP ERP), there is a postprocessing program for document archiving for the deletion of the secondary indexes (tables BSIS_BCK, BSAS_BCK, BSAD_BCK and so on) (report: FI_DOCUMNT_PST) and a utility program for the creation of the secondary indexes from archived documents (report: SAPF048S).
- You can save these secondary indexes in the historical area of the database in order to restrict the effect on the data volume. To do so, data aging must be active and the partitioning object FI_INDEX must have been maintained. An aging object is not required.

KNCX_DIF / LFCX_DIF:
In the case of AP/AR, during the archiving of the FI document (FI_DOCUMNT), auxiliary tables that are also used during the migration to S/4 HANA are compiled synchronously (update). The auxiliary table LFCX_DIF or KNCX_DIF contains the total of the archived documents and is taken into account for the totals views of AP/AR.
In case, customer has year-dependant number ranges for FI documents (e.g. document number 1234 can be used in fiscal year 2019 and 2020), please implement SAP note 2696008.

Further information for ACDOCA-BSTAT:
BSTAT = C can have different reasons / sources:
- Archived documents (FI_DOCUMNT_DEL updates value C)
- Balance carry forward is also updating C (then also POPER = 000)
- Entries coming from totals migration (migration to S/4HANA, then also MIG_SOURCE is not equal blank) will also update value C

→ BSTAT = C does not only mean archived document, it rather means: entry is only TOTALS relevant, but no longer LINE ITEMS relevant
→ To get TOTALS, all BSTAT = C entries need to be taken in addition to ACDOCA line item entries
→ If an entry has ACDOCA-BSTAT = C, it means this entry can not be seen via line item display transactions (e.g. FAGLLO3) or document display transactions (e.g. FB03). This entry is only relevant for calculating correct total amounts for this account.
Fi-AP/AR documents archiving – technical details

Archiving Object
  * FI_DOCUMNT

Archiving Reports
  * FI_DOCUMNT_WRI (write program):
    – Writes entries in archive file (also for ACDOCA)
  * FI_DOCUMNT_DEL (delete program):
    – Deletes tables entries (e.g., BKPF, BSEG) but not in ACDOCA!
    – Updates ACDOCA-BSTAT with value "C"
    – Optional: creates secondary index entries in BSIS_BCK, BSAS_BCK, BSAD_BCK, BSAK_BCK tables
    – Creates total records in LFXC_DIF / KNCX_DIF
  * FI_DOCUMNT_PST (postprocessing program):
    – Will delete secondary index entries in tables BSIS_BCK, BSAS_BCK, BSAD_BCK, BSAK_BCKs and BSIP
    – Will handle “old” secondary index entries, i.e., entries for which original documents were archived before this run and secondary index entries were built in _BCK tables
Fi-AP/AR documents archiving – remarks

Additional information to ACDOCA
- Entries still remain in table ACDOCA.
- But with ACDOCA-BSTAT = "C" system knows that these are archived entries / only total relevant and therefore they won’t be shown in line item reporting.

Additional information to AP/AR totals
- AP/AR archived entries will create a total record in tables LFCX_DIF or KNCX_DIF
- I.e., AP/AR totals = sum of all documents in database + entries in LFCX_DIF / KNCX_DIF
- LFCX_DIF / KNCX_DIF can be archived with FI_TF_CRE or FI_TF_DEB

SAP note
- 2346296
FI-GL

documents archiving

General Ledger documents
The already **existing dependencies** like:
- Document type life
- Account type life
- Minimum number of days in the system
- Documents with withholding tax information rest at least 455 days in the system
- Recurring documents, parked documents or sample documents are not considered
- No open items within the document

remain still the same and are still valid. But they won’t be discussed in this document.

**Material Ledger** archiving is no longer a pre-requisite for FI archiving with implementation of SAP note 2659820.

**FI Totals:**
No pre-requisite for compression run! Compression run can also be executed without FI totals archiving. But in case you need to fulfill Data Privacy & Protection requirements, you need to perform FI totals archiving.
**FI-GL documents archiving incl. Post-Processing – graphical overview**

**FI_DOCUMNT_WRI:**
- Creates archive files for all FI document relevant tables, e.g.:
  - BKPF
  - BSEG
  - ACDOCA
  - FAGLFLEXA
- By saving all these tables in archive files, already existing reports using archived data can still be used / no coding changes for them are needed. (see SAP note 2346296 section ‘storage format’)

Further information for tables x_BCK can be found within SAP note 2346296.

**x_BCK:**
- Entries will be written if account type life of the secondary indexes is maintained as longer than that of the documents.
- In addition like previously (SAP ERP), there is a postprocessing program for document archiving for the deletion of the secondary indexes (tables BSIS_BCK, BSAS_BCK, BSAD_BCK and so on) (report: FI_DOCUMNT_PST) and a utility program for the creation of the secondary indexes from archived documents (report: SAPF048S).
- You can save these secondary indexes in the historical area of the database in order to restrict the effect on the data volume. To do so, data aging must be active and the partitioning object FI_INDEX must have been maintained. An aging object is not required.

Further information for ACDOCA-BSTAT:

BSTAT = C can have different reasons / sources:

- Archived documents (FI_DOCUMNT_DEL updates value C)
- Balance carry forward is also updating C (then also POPER = 000)
- Entries coming from totals migration (migration to S/4HANA, then also MIG_SOURCE is not equal blank) will also update value C

→ BSTAT = C does not only mean archived document, it rather means: entry is only TOTALS relevant, but no longer LINE ITEMS relevant
→ To get TOTALS, all BSTAT = C entries need to be taken in addition to ACDOCA line item entries
→ If an entry has ACDOCA-BSTAT = C, it means this entry can not be seen via line item display transactions (e.g. FAGLL03) or document display transactions (e.g. FB03). This entry is only relevant for calculating correct total amounts for this account.
**FI-GL documents archiving – technical details**

**Archiving Object**
- FI_DOCUMNT

**Archiving Reports**
- FI_DOCUMNT_WRI (write program):
  - Writes entries in archive file (also for ACDOCA)
- FI_DOCUMNT_DEL (delete program):
  - Deletes tables entries (e.g. BKPF, BSEG) but not in ACDOCA!
  - Updates ACDOCA-BSTAT with value "C"
  - Optional: creates secondary index entries in BSIS_BCK, BSAS_BCK tables
- FI_DOCUMNT_PST (postprocessing program):
  - Will delete secondary index entries in tables BSIS_BCK, BSAS_BCK, BSAD_BCK, BSAK_BCK & BSIP
  - Will handle “old” secondary index entries, i.e., entries for which original documents were archived before this run and secondary index entries were built in _BCK tables
FI-GL documents archiving – remarks

Additional information to ACDOCA
- Entries still remain in table ACDOCA as they are needed for GL totals calculation.
- But with ACDOCA-BSTAT = "C" system knows that these are archived entries / only total relevant and therefore they won’t be shown in line item reporting.

SAP note
- 2346296
FI-AP/AR
totals archiving
Vendor / Customer totals
The already **existing dependencies** like:
- Document type life
- Account type life
- Minimum number of days in the system
- Documents with withholding tax information rest at least 455 days in the system
- Recurring documents, parked documents or sample documents are not considered
- No open items within the document

remain still the same and are still valid. But they won’t be discussed in this document.

**Material Ledger** archiving is no longer a pre-requisite for FI archiving with implementation of SAP note 2659820.

**FI Totals:**
No pre-requisite for compression run! Compression run can also be executed without FI totals archiving. But in case you need to fulfill Data Privacy & Protection requirements, you need to perform FI totals archiving.
How are AP/AR totals calculated in the system?

- **BKPF BSEG**: Actual / online data, not yet archived.
- **LFCX_DIF KNCX_DIF**: "Dummy" total records created for already archived AP/AR documents.
- **AP/AR totals**: Result of combining BKPF BSEG and LFCX_DIF KNCX_DIF.
Fi-AP/AR totals archiving – technical details

Archiving Object
- FI_TF_CRE (vendor totals)
- FI_TF_DEB (customer totals)

Archiving Reports
- FI_TF_CRE_WRI / FI_TF_DEB_WRI
- FI_TF_CRE_DEL / FI_TF_DEB_DEL

Remark
- During AP/AR totals archiving, the amount of tables LFXC_DIF / KNCX_DIF will be adapted in that way that amount of these tables and not yet archived documents from ACDOCA will balance to zero.
- In case all documents (referring to one total record) are already deleted, there is no longer any amount in x_DIF tables and therefore entry in x_DIF can also be deleted.
- Totals archiving is no pre-requisite for compression run. It is needed to fulfill Data Privacy & Protection requirements.
FI-GL

totals archiving

General Ledger totals
The already **existing dependencies** like:
- Document type life
- Account type life
- Minimum number of days in the system
- Documents with withholding tax information rest at least 455 days in the system
- Recurring documents, parked documents or sample documents are not considered
- No open items within the document

remain still the same and are still valid. But they won’t be discussed in this document.

**Material Ledger** archiving is no longer a pre-requisite for FI archiving with implementation of SAP note 2659820.

**FI Totals:**
No pre-requisite for compression run! Compression run can also be executed without FI totals archiving. But in case you need to fulfill Data Privacy & Protection requirements, you need to perform FI totals archiving.
How are GL totals calculated in the system?

Further information for **ACDOCA-BSTAT**:

**BSTAT = C** can have different reasons / sources:

- Archived documents (FI_DOCUMNT_DEL updates value C)
- Balance carry forward is also updating C (then also POPER = 000)
- Entries coming from totals migration (migration to S/4HANA, then also MIG_SOURCE is not equal blank) will also update value C

→ **BSTAT = 'C'** does not only mean archived document, it rather means: entry is only TOTALS relevant, but no longer LINE ITEMS relevant
→ To get TOTALS, all BSTAT = 'C' entries need to be taken in addition to ACDOCA line item entries
→ If an entry has ACDOCA-BSTAT = C, it means this entry can not be seen via line item display transactions (e.g. FAGLL03) or document display transactions (e.g. FB03). This entry is only relevant for calculating correct total amounts for this account.
GL total archiving (FI_TF.GLFL):

- **Write Job (FI_TF.GLFL_WRI):**
  The ACDOCA records are copied to the archive file (write job). Here they are stored in the new structure (ACDOCA) and in addition in the previously used structure (FAGLFLFEXT). This is also the case prior the conversion to SAP Simple Finance (SAP S/4HANA), classic FI was used and therefore table GLT0 was used to store the totals instead of FAGLFLFEXT. By doing this, access to archive is possible.

- **Delete Job (FI_TF.GLFL_DEL):**
  A new record is created which corresponds the archived total record but has the value with inverted sign. Based on this, the application will interpret both total records (i.e. BSTAT = C) / the total amount as 0 and therefore will not show any result.

- Totals archiving is no prerequisite for Compression Run, i.e. compression run can be executed with or without totals archiving before.

**Compression Run:**

- Matching 'total' records which balance to 0 and deleting them.
- Compression Run has only technical impacts on table ACDOCA by reducing the number of entries of ACDOCA (after successfull run). It has no impact on business view / access of end-users for ACDOCA.
FI-GL totals archiving – technical details

Archiving Object
- FI_TF_GLF

Archiving Reports
- FI_TF_GLF_WRI
- FI_TF_GLF_DEL

Remark
- As the GL totals will no longer be saved in a separate totals table in the system, each GL total will be calculated on the fly when needed. Calculation is based on entries in table ACDOCA. When archiving GL totals, entries in ACDOCA won’t be deleted as they might still be needed. Therefore during the archiving delete run no deletion takes place, but an entry with inverted sign is inserted into ACDOCA to set the resulting balance to zero.
- A real data record reduction will take place by executing compression run.
- Totals archiving is no pre-requisite for compression run. It is needed to fulfill Data Privacy & Protection requirements.
Compression run
The already **existing dependencies** like:
- Document type life
- Account type life
- Minimum number of days in the system
- Documents with withholding tax information rest at least 455 days in the system
- Recurring documents, parked documents or sample documents are not considered
- No open items within the document

remain still the same and are still valid. But they won’t be discussed in this document.

**Material Ledger** archiving is no longer a pre-requisite for FI archiving with implementation of SAP note 2659820.

**FI Totals:**
No pre-requisite for compression run! Compression run can also be executed without FI totals archiving. But in case you need to fulfill Data Privacy & Protection requirements, you need to perform FI totals archiving.
Archiving of different modules won’t delete entries in table ACDOCA, but will “mark” ACDOCA-entries as no longer relevant for them by:

- **CO:**
  - ACDOCA-C0_BELNR = filled → CO document, CO archiving will initialize ACDOCA-C0_BUZEI
  - ACDOCA-BSTAT = “C” and ACDOCA-MIG_SOURCE = “C” → CO document from migration, CO archiving will initialize ACDOCA-OBJNR
  - FI documents: line item no longer item relevant, only total relevant (ACDOCA-BSTAT = “C” set by archiving object FI_DOCUMNT)
  - GL totals: entry with inverted sign inserted in ACDOCA by archiving object FI_TF_GLH

The compression run replaces all entries of ACDOCA fulfilling above criteria with aggregated entries. This aggregation takes place on the granularity of the balance carry forward, thus no changing this balance. In case balance will be zero (i.e. all documents and totals are already archived), no aggregated entry will be written. In this moment, compression run will only delete old entries.

In case the compression run is executed **after document archiving**, the effect is mainly a memory footprint reduction.

In case it is executed **after the totals archiving**, the DPP requirements of deleting privacy relevant data is fulfilled. (In the simplest case by not having an entry in the system, because the balance would be zero. When single line items remain, we keep the aggregated values of these entries with inverted sign.)
Balance Carry Forward criteria for GL-accounts

- By choosing balance carry forward criteria (BCF), your balance carry forwards in period end closing process will be enriched with more or fewer account assignments.
- Some of the fields are required (e.g. MATNR material) and not changeable, but some can be adapted to customer needs (e.g. BLART document type).
- Compression Run will replace multiple line items in ACDOCA with their aggregated entry based on the granularity of the balance carry forward.
- Consequence:
  - customer is using many BCF criterias
  - BCF has a deep / diversely granularity
  - probability for compression run to find suitable / compressable ACDOCA entries is low

Check carefully which BCF criteria are really needed
**Balance Carry Forward criterias for GL-accounts – customizing**

**Transaction**
- FINS_FCT and select desired component

**Path in Implementation Guide (IMG):**
Balance Carry Forward criterias for GL-accounts – Example

**Example:** criteria ‘profit center’ PRCTR is activated for balance carry forward

- only those ACDOCA relevant line items which have the same value in field PRCTR can be compressed (and for sure all the other criterias which are activated also need to have the same values…)

- rule: the more BCF criterias are activated the less suitable entries can be found by compression run
Among others, compression run will total the amounts of all line items with ACDOCA-BSTAT = ‘C’.

Only those records will be compressed which ‘fit’ together, e.g. same account and same period (and some more granularity conditions, e.g. based on balance carry forward characteristics).

The previous records are deleted and one new record containing the sum of the previous records is created.

By implementing SAP note 2518769, compression run updates ACDOCA-SGTXT with its run identification. So you can distinguish which ACDOCA record is created by compression run and which by update of FI_DOCUMNT_DEL.

Compresion Run has only technical impacts on table ACDOCA by reducing the number of entries of ACDOCA (after successfull run). It has no impact on business view / access of end-users for ACDOCA.
Handling of compressed ACDOCA records in next compression run:

Here you can see, that a ‘total’ record, which has been created by a previous compression run (Amount = 15$) is considered once again for the compression in case the granularity criteria are matching e.g. account and same period.
GL total archiving (FI_TF_GLF):

- **Write Job (FI_TF_GLF_WRI):**
The ACDOCA records are copied to the archive file (write job). Here they are stored in the new structure (ACDOCA) and in addition in the previously used structure (FAGLFLEXT). This is also the case prior the conversion to SAP Simple Finance (SAP S/4HANA), classic FI was used and therefore table GLT0 was used to store the totals instead of FAGLFLEXT. By doing this, access to archive is possible.

- **Delete Job (FI_TF_GLF_DEL):**
A new record is created which corresponds the archived total record but has the value with inverted sign. Based on this, the application will interpret both total records (i.e. BSTAT = C) / the total amount as 0 and therefore will not show any result.

- Totals archiving is no prerequisite for Compression Run, i.e. compression run can be executed with or without totals archiving before.

**Compression Run:**

- Matching 'total' records which balance to 0 and deleting them.
- Compression Run has only technical impacts on table ACDOCA by reducing the number of entries of ACDOCA (after successful run). It has no impact on business view / access of end-users for ACDOCA.
Compression run – technical details

Transactions
- FINS_ARC_ANALYZE (analyzing tool)
- FINS_ARC (production run)
- FINS_ARC_MONITOR (monitoring tool)

Selection view
- Maintenance view FINSV_ARCH_SEL can be used to limit data selection (e.g. by company code, year), see SAP notes 2348153 & 2837923
- Exclude current fiscal year and all fiscal years which aren’t relevant for FI archiving by usage of SAP note 2499573
Compression run – remarks

- compression run is a post-processing step to various archiving runs
- Archiving runs write data into the archive and delete the corresponding data in the database, except for entries in ACDOCA. To ensure the correctness of the GL totals, entries in ACDOCA are not deleted, but only marked as no longer relevant for the corresponding application (i.e., CO, AA, FI documents, GL totals) by the archiving run.
- The compression run itself replaces all single entries of ACDOCA fulfilling defined criteria* with aggregated entries. That's the first time ACDOCA entries will be technically reduced.
- If these aggregated entries balance to zero, compression run will delete old entries.
- By usage of SAP note 2518769, the compression run ID will be saved in ACDOCA-SGTXT for the created entries.

* See appendix for detailed criteria

Criteria of corresponding archiving applications (When can ACDOCA entries be compressed?):

- CO: After archiving data, the leading application like SD document (archiving SD_VBAK) or CO data referencing a cost center (archiving object CO_TRANS), the object number (OBJNR) and the CO line item number (CO_BUZEI) is cleared (by the deletion part of the corresponding archiving object). In case of CO data originating from the migration to S/4 HANA (MIG_SOURCE = "C" or “S”) that is not attached to an FI-document (no BKPF) an additional correction report (FINS_CO_ARCH_PREP_ANALYZE) has to be executed to mark the entry as ready for deletion (ACDOCA-FUP_ACTION = “D”).
- AA: Asset is no longer in the database / online, no further indicator for ACDOCA needed.
- FI-Documents: Line item is marked as no longer item relevant, i.e. only total relevant like balance carry forward (ACDOCA-BSTAT = "C").
- GL-Totals: During the archiving delete run (report FI_TF_GLF_DEL) no update of already existing ACDOCA entries takes place, but in addition, an entry with inverted sign is inserted into ACDOCA to set the resulting balance to zero.

For further information please check also SAP note 2346296.
Compression run – analyzing tool FINS_ARC_ANALYZE

Transaction
- FINS_ARC_ANALYZE

Remark
- Get an overview of the numbers for a larger part of data or
- Get a more detailed analysis by restricting to a small set of numbers by choosing the Detailed information option
- Only for analyzing purposes; no compression will take place

How to interpret the result of transaction FINS_AR_ANALYZE / report FINS_ARCH_ANALYZE:

The result of the analysis report FINS_ARCH_ANALYZE can cause incorrect expectations here with regard to the anticipated data reduction.
The log displays the number of compressible (deletable) entries but not the number of inserted entries.
This means that the user only notices the behavior described above (i.e. insert of newly created ACDOCA entries by compression run) when the productive compression run is executed (transaction: FINS_ARC), and not when the analysis report is used.
The background to this is that the report was provided for the execution of a functional test. You can only check whether the actual correct entries are deleted.

(see further information in SAP note 2346296)

As a result of the implementation of SAP note 2486006, further information will be listed in the log of the analysis report. This enables improved comparability between the actual compression run and the analysis report. You then explicitly receive messages telling you how many lines will be deleted and how many lines will be inserted in the analysis report.
Compression run – production run FINS_ARC

Transaction
- FINS_ARC

Remark
- Execution of productive compression run
- Creation of work packages and worker jobs

If you don’t provide any number of batch jobs, all available will be used!

**No archiving can take place in parallel** with the compression run, since the number of entries that can be compressed is not allowed to change during the compression run. A lock in the archiving runs (AA, ML, FI document, and GL/AP/AR totals) and the compression run prevents this. The archiving runs themselves can run at the same time.

Compression Run itself can be executed during productive time (i.e. no posting free time is required). In case, a user is changing the used records at the same time as compression run, a rollback will take place.

**Selection possibility:**
Please check SAP notes 2348153 and 2837923 for usage of selections and 2499573 for limitation of fiscal years.

**Field ‘number of batch jobs’:**
If field is blank, compression run will use all available batch jobs.
By implementing note 2847371, you can use a function of pre-assignment of values for this field.
Compression run – monitoring FINS_ARC_MONITOR

Transaction
- FINS_ARC_MONITOR

Remark
- Monitoring the progress of compression run
- By double-clicking on lowest level of the last run, you get more details (per work package)
- By double-clicking on the work package, you get the log of this work package

If you don’t provide any number of batch jobs, all available will be used!
Compression run – How does compressed ACDOCA lines look like?

ACDOCA before FI compression run:
- Document number (field: BELNR) and Text (field: SGTXT) have values from original posting
Compression run – How does compressed ACDOCA lines look like?

ACDOCA after FI compression run:

- Former ACDOCA lines are deleted
- New, compressed ACDOCA lines are created, can be distinguished by:

  - Document number (field: BELNR) starting with ‘DR…’
  - Text (field: SGTXT) incl. ‘Compression Run (run id)’
Archiving of **Master Data**
(Customer AR, Vendor AP, Bank Master Data)
The already **existing dependencies** like:
- Document type life
- Account type life
- Minimum number of days in the system
- Documents with withholding tax information rest at least 455 days in the system
- Recurring documents, parked documents or sample documents are not considered
- No open items within the document

remain still the same and are still valid. But they won’t be discussed in this document.

**Material Ledger** archiving is no longer a pre-requisite for FI archiving with implementation of SAP note 2659820.

**FI Totals:**
No pre-requisite for compression run! Compression run can also be executed without FI totals archiving. But in case you need to fulfill Data Privacy & Protection requirements, you need to perform FI totals archiving.
Archiving of Master Data

As there are no changes, this topic won't be treated in this presentation.
How to access archived financial data?
General principle

Archive access

The audit-relevant programs that can read from the archive and have been transferred to SAP S/4HANA are retained. They continue to read in the (SAP ERP) format from the archive and display the data in the usual format. As a result, reading from the archive continues to be supported.

Newer programs that are based on the OData protocol or INA protocol do not offer archive access.

…

(see SAP note 2346296)

Please see also SAP help for further information

Link to SAP Help in full text:
https://help.sap.com/viewer/4edfc353d1164aa99790baf2c0d0e090/1709%20002/en-US/8a1f3b53f831070be10000000a4450e5.html
# Transactions to access archive FI_DOCUMNT (examples)

<table>
<thead>
<tr>
<th>Technical name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>FB03, FB03L</td>
<td>Display Document</td>
</tr>
<tr>
<td>FBL1N</td>
<td>Vendor account line item display</td>
</tr>
<tr>
<td>FBL3N</td>
<td>GL account line item display</td>
</tr>
<tr>
<td>FBL5N</td>
<td>Customer account line item display</td>
</tr>
<tr>
<td>FAGLL03</td>
<td>Display / Change line items GL-accounts</td>
</tr>
<tr>
<td>FBL1H</td>
<td>Vendor line item browser *</td>
</tr>
<tr>
<td>FBL3H</td>
<td>GL account line item browser *</td>
</tr>
<tr>
<td>FBL5H</td>
<td>Customer line item browser *</td>
</tr>
</tbody>
</table>

* only by usage of a BADI

Further information can be found in SAP help:
https://help.sap.com/viewer/4edfc353d1164aa99790baf2c0d0e090/1709%20002/en-US/8a1f3b53f831070be10000000a4450e5.html

**Transactions FBL*H Line Item Browser:**
In standard version, no archive access is possible. But you can use a given BADI to access archived data. Please check therefore SAP notes 2180685 and 2316951.
Example for FB03

Display Document: Data Entry View

Document Number: 1600008855
Company Code: 0001
Fiscal Year: 2010
Document Date: 31.01.2010
Posting Date: 31.01.2010
Reference: 
Cross-Comp.No: 
Currency: EUR

Item | GL Account | GL Account Name | Amount Curr. | FTyp | AssIV | Contract No. | Cont Type | TTy | Ass
--- | --- | --- | --- | --- | --- | --- | --- | --- | ---
1 50 | 194200 | Technical clearing | 697.10 EUR | 
2 05 | 150500 | Rec. acct.-payt. adj. | 697.10 EUR | 4531 |

Document 0001 1600008855 2010 is already archived View details
Example for FAGLL03
Details for transaction FAGLL03

Transaction FAGLL03 reacts differently by accessing archived documents, depending on:

- chosen option 'entry view' or 'General Ledger (G/L)-view' &
- documents archived before or after SAP S/4HANA migration

<table>
<thead>
<tr>
<th></th>
<th>Before SAP S/4HANA migration</th>
<th>After SAP S/4HANA migration</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Archived documents (without any ledger info at all)</td>
<td>Archived documents (ONLY extension ledger, without leading ledger info)</td>
</tr>
<tr>
<td>FAGLL03 entry view</td>
<td>Yes, documents will be listed</td>
<td>No</td>
</tr>
<tr>
<td>(Erfassungssicht)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>FAGLL03 GL-view</td>
<td>No (as there are no ledger info)</td>
<td>Yes</td>
</tr>
<tr>
<td>(Hauptbuchsicht)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- **Entry View** can and is allowed to show you only items which are posted WITH leading ledger. Items posted WITHOUT leading ledger (e.g. only posted on your extension ledger) cannot be shown here because of business / accounting reasons.

- **GL-View** can show you 'all' items, including items WITHOUT leading ledger, i.e. such items posted only in another ledger (e.g. your extension ledger postings). Within G/L view, you can choose which ledger you want to see.

Documents archived before S/4 migration don't have the relevant ledger information in the archive file. This ledger information will be updated in the documents only during migration to S/4. As archive files won't be technically migrated to S/4, these ledger information is just missing in archive files and therefore GL-view can not show them.
Example for FAGLL03 – which archive info structure is used?

FAGLL03 entry view:
- Postings including leading ledger
- Relevant entries in tables BKPF, BSEG, ACDOCA etc. but not in FAGLFLLEXA
- Archiving builds corresponding entries in archive info structure
  SAP_FI_DOC_002

FAGLL03 G/L view:
- Postings also not-including leading ledger / Postings to non-leading ledgers only
- Relevant entries also in table FAGLFLLEXA
- As a consequence, archiving builds corresponding entries in archive info structure
  SAP_FI_DOC_003
- Please make sure that SAP note 2649785 is used with the minimum required fields in info structure SAP_FI_DOC_003:
  - RBUKRS
  - RACCT
  - RLDNR
  - BSTAT
  - BUDAT

Difference between entry view and G/L view?:
Within G/L view, you can choose which ledger you want to see.
Within entry view, you can’t choose the ledger, you see how document is entered by user without special differentiation on single ledgers.
Reports to access archive FI_DOCUMNT (examples)

<table>
<thead>
<tr>
<th>Technical name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>FAGL_ACCOUNT_ITEMS_GL</td>
<td>G/L account line item report</td>
</tr>
<tr>
<td>RFITEMAP</td>
<td>Vendor line item report</td>
</tr>
<tr>
<td>RFITEMAR</td>
<td>Customer line item report</td>
</tr>
<tr>
<td>RFITEMGL</td>
<td>G/L account line item report</td>
</tr>
<tr>
<td>RFBELJ00</td>
<td>Compact journal</td>
</tr>
<tr>
<td>RFPOJ00</td>
<td>Line item journal</td>
</tr>
<tr>
<td>RFKKET00</td>
<td>Extract for accumulated open item balance audit trail</td>
</tr>
<tr>
<td>RFKLET00</td>
<td>Extract for the accumulated historical balance audit trail</td>
</tr>
</tbody>
</table>

Further information can be found in SAP Help:
Example for RFBELJ00
Transactions / reports to access archive CO_TRANS (examples)

- Transactions:
  - KSB1 (Display Actual Cost Line Items for Cost Center) and
  - KSB5 (Display Actual Cost Documents)
- Report FINS_CO_TRANS_READ (sequential read)
- Report Writer Reports

Please find further information in SAP notes 2230377 and 2576438
Appendix
Compression run
Further information

- The compression run replaces all entries of ACDOCA with aggregated entries if they are fulfilling following criteria:
  - **CO**: After archiving data the leading application like SD document (archiving SD_VBAK) or CO data referencing a cost center (archiving object CO_TRANS), the object number (OBJNR) and the CO line item number (CO_BUZEI) is cleared (by the deletion part of the corresponding archiving object).
    In case of CO data originating from the migration to SAP S/4HANA (MIG_SOURCE = "C" or "S") that is not attached to an FI-document (no BKPF) an additional correction report (FINS_CO_ARCH_PREP_ANALYZE) has to be executed to mark the entry as ready for deletion (ACDOCA-FUP_ACTION = "D").
  - **AA**: Asset is no longer in the database / online, no further indicator for ACDOCA needed.
  - **FI-Documents**: Line item is marked as no longer item relevant, i.e. only total relevant like balance carry forward (ACDOCA-BSTAT = "C").
  - **GL-Totals**: During the archiving delete run (report FI_TF_GL Федер_DE) no update of already existing ACDOCA entries takes place, but in addition, an entry with inverted sign is inserted into ACDOCA to set the resulting balance to zero.
    - For further information please check also SAP note 2346296.

- This aggregation takes place on the granularity of the balance carry forward, thus no changing this balance. In case balance will be zero (i.e. all documents and totals are already archived), no aggregated entry will be written. In this moment, compression run will only delete old entries.
Technical objects

Archiving Objects
- FI_DOCUMNT → available as of SAP S/4HANA Finance 1503 SP 08 and 1605 SP04
- FI_TF_GLC → is replaced with FI_TF_GLF as of SAP S/4HANA Finance 1503 SP 08 and 1605 SP04
- FI_TF_CRE → vendor totals
- FI_TF_DEB → customer totals
- CO_TRANS → available as of SAP S/4HANA Finance 1503 SP 08 and 1605 SP04

Tables
- LFCX_DIF / KNCX_DIF → "dummy" total records for already archived AP/AR documents
- x_BCK → secondary indexes tables (can be created by FI_DOCUMNT_DEL report)
Reports

Reports

- `FI_DOCUMENT_WRI` → FI documents archiving write report
- `FI_DOCUMENT_DEL` → FI documents archiving deletion report
- `FI_DOCUMENT_PST` → FI documents archiving postprocessing report

- `FI_TF_CRE_WRI / FI_TF_DEB_WRI` → FI totals AP/AR archiving write report
- `FI_TF_CRE_DEL / FI_TF_DEB_DEL` → FI totals AP/AR archiving deletion report
- `FI_TF(GLF)_WRI` → FI totals GL archiving write report
- `FI_TF(GLF)_DEL` → FI totals GL archiving deletion report
Transactions

Transactions
- FINS_AR1_ANALYZE → Analyze CO for FI compression
- FINS_AR1 → CO Archiving preparation for FI compression
- FINS_AR1_MONITOR → CO archiving preparation for FI compression Monitor
- FINS_ARC_ANALYZE → ADOCA Compression Run analyze
- FINS_ARC → ADOCA Compression Run productive
- FINS_ARC_MONITOR → ADOCA Compression Run monitoring
## SAP notes overview (1)

<table>
<thead>
<tr>
<th>SAP note</th>
<th>Title</th>
<th>Relevant technical object</th>
</tr>
</thead>
<tbody>
<tr>
<td>2176823</td>
<td>FAQ on CO-PA issues in SAP S/4HANA Finance</td>
<td>COPA2*</td>
</tr>
<tr>
<td>2180885 &amp; 2316951</td>
<td>FBL*H: access to archived data</td>
<td>FBL*H</td>
</tr>
<tr>
<td>2190848</td>
<td>FAQ - Aging for Journal Entry in SAP Simple Finance</td>
<td>(general)</td>
</tr>
<tr>
<td>2230377</td>
<td>Implementation of CO_TRANS</td>
<td>CO_TRANS</td>
</tr>
<tr>
<td>2342347</td>
<td>Implementation of table ACDOCA_M_EXTRACT</td>
<td>ACDOCA_M_EXTRACT</td>
</tr>
<tr>
<td>2346296</td>
<td>technical details for FI archiving</td>
<td>(general)</td>
</tr>
<tr>
<td>2332634 &amp; 2332670</td>
<td>manual implementation of new FI archiving for SAP S/4HANA Finance 1605 SP04</td>
<td>FI_DLCUMNT</td>
</tr>
<tr>
<td>2348153</td>
<td>FI compression run: selection possibility</td>
<td>FI compression run</td>
</tr>
<tr>
<td>2426075</td>
<td>CO_TRANS will support reconciliation object</td>
<td>CO_TRANS</td>
</tr>
<tr>
<td>2463315</td>
<td>FI compression run does not calculate workpackages</td>
<td>FI compression run</td>
</tr>
<tr>
<td>2486006</td>
<td>FINS_ARC_ANALYZE will list number of inserted ACDOCA lines</td>
<td>FI compression run</td>
</tr>
<tr>
<td>2498230 &amp; 2508708</td>
<td>FI_DLCUMNT implementation for SAP S/4HANA Finance 1503 SP08</td>
<td>FI_DLCUMNT</td>
</tr>
</tbody>
</table>
### SAP notes overview (2)

<table>
<thead>
<tr>
<th>SAP note</th>
<th>Title</th>
<th>Relevant technical object</th>
</tr>
</thead>
<tbody>
<tr>
<td>2499573</td>
<td>FI compression run: limitation for fiscal years</td>
<td>FI compression run</td>
</tr>
<tr>
<td>2518769</td>
<td>FI compression run: run ID will be saved in ACDOCA-SGTXT</td>
<td>FI compression run</td>
</tr>
<tr>
<td>2535263</td>
<td>CO_TRANS did not clear CO relevant fields in ACDOCA for additional ledgers in FI</td>
<td>CO_TRANS, ACDOCA</td>
</tr>
<tr>
<td>2576438</td>
<td>Report writer for archive infosystem spec. CO_TRANS</td>
<td>CO_TRANS</td>
</tr>
<tr>
<td>2608278</td>
<td>Checking for assets in ACDOCA</td>
<td>ACDOCA-ANLN1</td>
</tr>
<tr>
<td>2649785</td>
<td>FI_DOCUMENT: infostructure SAP_FI_DOC_003 with at least required fields</td>
<td>FI_DOCUMENT, AIS</td>
</tr>
<tr>
<td>2659820</td>
<td>CO_ML_BEL: ACDOCA-KALNR will no longer be cleared and needed (ML no longer prerequisite for Fi Document archiving)</td>
<td>ACDOCA-KALNR</td>
</tr>
<tr>
<td>2696008</td>
<td>double entries in LFCX_DIF / KNCX_DIF</td>
<td>LFCX_DIF / KNCX_DIF</td>
</tr>
<tr>
<td>2780157</td>
<td>CO_TRANS dump in case of many records / activity types for the cost centers in table ONRKL</td>
<td>CO_TRANS</td>
</tr>
<tr>
<td>2783535, 2784706, 2786852, 2787122, 2793554</td>
<td>General issues with FI Compression Run</td>
<td>FI compression run</td>
</tr>
<tr>
<td>2818267</td>
<td>DVM during migration to SAP S/4HANA</td>
<td>(general)</td>
</tr>
</tbody>
</table>
### SAP notes overview (3)

<table>
<thead>
<tr>
<th>SAP note</th>
<th>Title</th>
<th>Relevant technical object</th>
</tr>
</thead>
<tbody>
<tr>
<td>2833413 &amp; 2861618</td>
<td>Report Painter usage of data source ‘archive’ does not show all data</td>
<td>(general)</td>
</tr>
<tr>
<td>2837923</td>
<td>FI Compression Run: further selection possibilities (from / to year)</td>
<td>FI compression run</td>
</tr>
<tr>
<td>2847371</td>
<td>Archiving: Number of Jobs for FI Compression Run – pre-assignment</td>
<td>FI compression run</td>
</tr>
<tr>
<td>2852252</td>
<td>CO_TRANS reporting of archived data (better performance, usage of other AIS infostructure)</td>
<td>CO_TRANS</td>
</tr>
</tbody>
</table>
Thank you.

Contact information:

Susanne Tewes  
Data Volume Management Global Team  
SAP SE  
susanne.tewes@sap.com